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TITLE: Controllable lighting effects using polymer  
optical fibres - with rainbow coloured side emissions  
ensured by using special sheathing and cladding materials

PATENT-ASSIGNEE: ANONYMOUS [ANON]

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PATENT-FAMILY:

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APPLICATION-DATA:

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ABSTRACTED-PUB-NO: RD 388052A

BASIC-ABSTRACT:

End-emitting and side-emitting solid-core polymer optical fibers (POF's) have found use for illumination. Side-emitting fibers can be made to produce novel, controllable effects by using cladding materials with special properties. In this context, the cladding refers to the material immediately surrounding the core of the POF. In some cases, sheathing material may surround the cladding. Examples of special effects include: 1. Emission of light from a strip or slit along the axis of the POF. This effect can be produced by preparing a cladding that is internally reflective, except along an axial strip. Such a

cladding  
can be prepared, for example, using a striping die on an extrusion  
line, or by  
applying a masking material, such as a reflective coating, to the  
cladding. 2.  
Alternating bands of light and darkness along the axis of the POF.  
This effect  
could be produced by preparing a cladding that is alternately  
reflective and  
non-reflective. Such a cladding can be prepared, for example, by  
periodically  
applying a reflective coating at the outlet of an extrusion die. 3.  
Providing  
uniform light intensity along a length of POF. Normally, a side-  
emitting POF  
emits more light near the light source than it does far away from the  
light  
source. This tendency can be overcome by providing a cladding whose  
internal  
reflectance is graduated, with higher internal reflectance near the  
light  
source and lower internal reflectance far away from the light source.  
Such a  
cladding can be prepared, for example, by varying the thickness of  
the  
cladding, with a thicker cladding near the light source and a thinner  
cladding  
further from the light source. 4. Restricting the viewing angle  
over which  
light can be seen from the side-emitting POF. In some cases, it may  
be  
preferable to provide indirect lighting. In these cases, a side-  
emitting POF  
can be prepared with a cladding that restricts the viewing angle over  
which  
light can be seen directly. Indirect lighting can be provided by  
positioning,  
for example, a painting within the angle of direct lighting, but  
restricting  
the observer's position outside the directly lit area. 5. Rainbow-  
coloured  
side emissions.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: CONTROL LIGHT EFFECT POLYMER OPTICAL FIBRE RAINBOW  
COLOUR SIDE

EMIT ENSURE SPECIAL SHEATH CLAD MATERIAL

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